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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,653	07/19/2001	Fuminori Takizawa	P/1909-152	8648

7590 04/22/2002

STEVEN I. WEISBURD, ESQ.
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
1177 AVENUE OF THE AMERICAS
41ST FLOOR
NEW YORK, NY 10036-2714

EXAMINER

NGUYEN, LAM S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 04/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/889,653

Applicant(s)

TAKIZAWA, FUMINORI

Examiner

LAM S NGUYEN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 6, 7, 8, 9, 15, 16, 17, 18, 19, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "opposed to one" is unclear to show how opposite of the current forming process to the previous forming process. Therefore, as the scope of the claims cannot be determined, a prior art search and consideration of claim patentability has not been undertaken for these claims.

Referring to claim 17: rejected since its dependence on the redetected claim 15.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claim 1, 2, 3, 4, 5, 10, 11, 12, 13, and 14 are rejected under 35 U.S.C. 102(e) as being obvious by Shimada et al. (US 6293643)

Shimada et al. discloses an ink jet recording head driving method provided with a plurality of nozzles (FIG. 4, element Nz) and a plurality of pressure generating chambers

(FIG. 4, element 68) corresponding thereto by applying drive waveform signals (FIG. 7) to piezoelectric actuator (FIG. 4, element PE), the process comprising the steps of:

Referring to claims 1 and 10:

Scanning said ink jet recording head in a first direction which is relatively orthogonal to the located direction of said plurality of nozzles concerning said recording medium (FIG. 9, MAIN SCANNING DIRECITON) and generating a plurality of drive waveform signals according to a jet amount of said ink droplets (FIG. 9, element DRIVING WAVEFORM)

selecting any one or none of said plurality of waveforms signals for each of said plurality of nozzles according to gray scale information of printing data (FIG. 9, element 55 selects either waveform corresponding to ink drop 1 or 2 in FIG. 15)

applying voltage to corresponding piezoelectric actuators, while ink jet recording head is moved in a second direction (FIG. 15, FEEDING AMOUNT OF PAPER) which is relatively orthogonal to said first direction concerning said recordable medium.

a recording means (FIG. 8, element 61~66) records drive waveform information on drive waveform signals

a waveform generating means (FIG. 8, element 51) generates a plurality of drive waveform signals on the basis of information on a plurality of drive waveforms

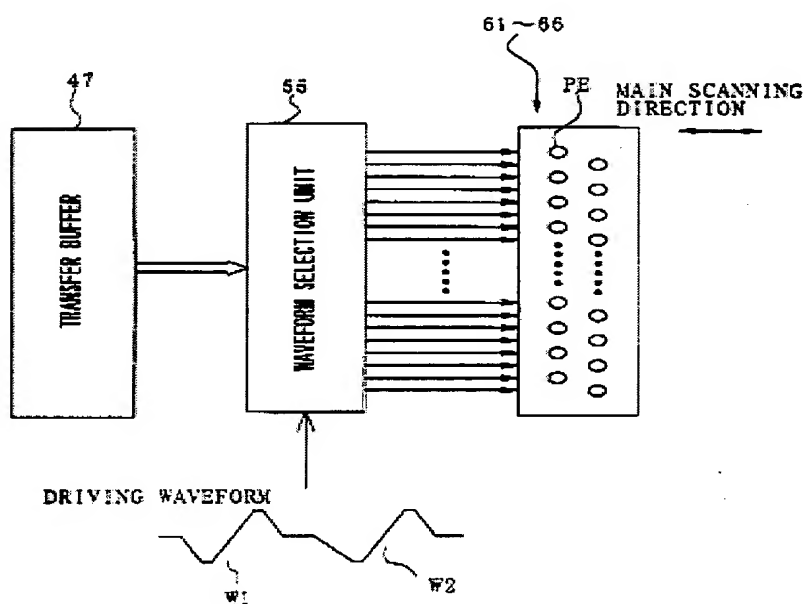
a control means (FIG. 2, element 40) moves the ink jet recording head

a drive means (FIG. 8, element 55) applies voltage to said piezoelectric actuators

Referring to claims 2 and 11:

At least one of a plurality of drive waveform signals (FIG. 16, the waveform corresponding to the dots 2) generated at said dot forming process is different from any of a plurality of drive waveforms signals (FIG. 16, the waveform corresponding to the dots 1) generated at the previously executed dot forming process.

Fig. 9



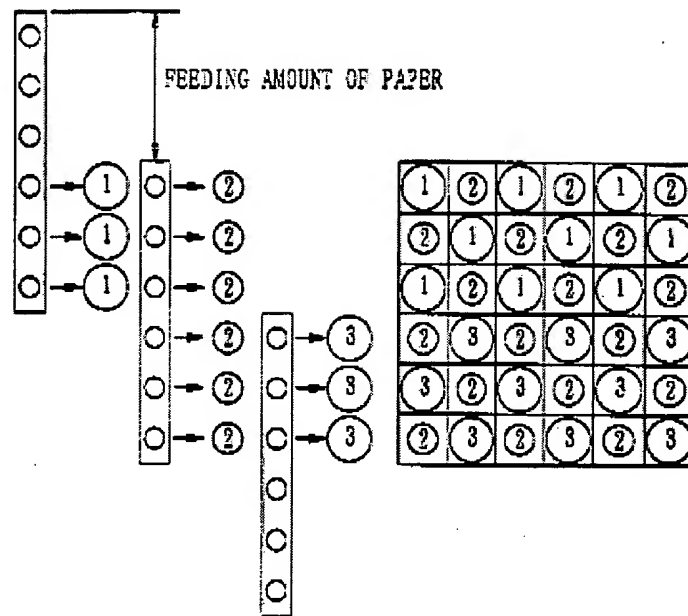
Referring to claims 3 and 12:

Drive waveform signals for discharging ink droplets with a large jet amount and those with a small jet amount are generated in combination (FIG. 22).

Referring to claims 4 and 13:

The waveform signals discharging ink droplets with a large jet amount (FIG. 16, ink drops 1) and those with a small jet amount (FIG. 16, ink drops 2) are alternately executed.

Fig. 16



Referring to claims 5 and 14:

Said dot forming process is executed at least twice on one and the same place of said recording medium (FIG. 23).

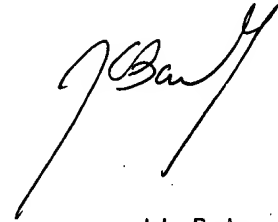
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BARLOW can be reached on (703)308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

April 17, 2002

A handwritten signature in black ink, appearing to read 'J Barlow', with a long, sweeping horizontal stroke extending to the right.

John Barlow
Supervisory Patent Examiner
Technology Center 2800